

AXL F AI2 AO2 XC 1H - Analog module



1035429

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Axioline F, Analog I/O module, Analog inputs: 2, 0 V ... 5 V, -5 V ... 5 V, 0 V ... 10 V, -10 V ... 10 V, 0 mA ... 20 mA, 4 mA ... 20 mA, -20 mA ... 20 mA, connection technology: 2-conductor, Analog outputs: 2, 0 V ... 5 V, -5 V ... 5 V, 0 V ... 10 V, -10 V ... 10 V, 0 mA ... 20 mA, 4 mA ... 20 mA, -20 mA ... 20 mA, connection technology: 2-conductor, transmission speed in the local bus: 100 Mbps, Extreme conditions version, degree of protection: IP20, including bus base module and Axioline F connectors

Product description

The module is designed for use within an Axioline F station. It is used to acquire and output analog voltage and current signals.

Your advantages

- 2 analog differential input channels
- Connection of sensors in 2-conductor technology
- Current ranges: 0 mA ... 20 mA, 4 mA ... 20 mA, ± 20 mA
- Voltage ranges: 0 V ... 10 V, ± 10 V, 0 V ... 5 V, ± 5 V
- 2 analog outputs
- Connection of actuators in 2-conductor technology
- Current ranges: 0 mA ... 20 mA, 4 mA ... 20 mA, ± 20 mA
- Voltage ranges: 0 V ... 10 V, ± 10 V, 0 V ... 5 V, ± 5 V
- Process data update < 150 μ s
- Device rating plate stored
- Can be used under extreme ambient conditions
- Extended temperature range of -40 °C ... +70 °C (see "Tested successfully: use under extreme ambient conditions" in the data sheet)
- Partially coated PCBs

Commercial data

| | |
|--------------------------------------|--------------------|
| Item number | 1035429 |
| Packing unit | 1 pc |
| Minimum order quantity | 1 pc |
| Sales key | DR02 |
| Product key | DRI245 |
| Catalog page | Page 84 (C-6-2019) |
| GTIN | 4055626541792 |
| Weight per piece (including packing) | 197 g |
| Weight per piece (excluding packing) | 197 g |
| Customs tariff number | 85389091 |
| Country of origin | DE |

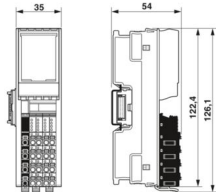
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Technical data

Dimensions

| | |
|---------------------|--|
| Dimensional drawing |  |
| Width | 35 mm |
| Height | 126.1 mm |
| Depth | 54 mm |
| Note on dimensions | The depth applies when a TH 35-7.5 DIN rail is used (in accordance with EN 60715). |

Interfaces

Axioline F local bus

| | |
|----------------------|-----------------|
| Number of interfaces | 2 |
| Connection method | Bus base module |
| Transmission speed | 100 Mbps |

System properties

Module

| | |
|-----------------------------|---------|
| Input address area | 4 Byte |
| Output address area | 4 Byte |
| Required parameter data | 11 Byte |
| Required configuration data | 7 Byte |

Input data

Analog

| | |
|--|--|
| Input name | Analog inputs |
| Description of the input | Differential inputs, voltage or current can be chosen separately |
| Number of inputs | 2 |
| A/D conversion time | 2 μ s |
| A/D converter resolution | 16 bit |
| Connection method | Push-in connection |
| Connection technology | 2-conductor |
| Note regarding the connection technology | shielded, twisted pair |
| Current input signal | 0 mA ... 20 mA 4 mA ... 20 mA -20 mA ... 20 mA |
| Input resistance current input | 104 Ω (typical) |

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| | |
|---|--|
| Voltage input signal | 0 V ... 5 V |
| | -5 V ... 5 V |
| | 0 V ... 10 V |
| | -10 V ... 10 V |
| Input resistance of voltage input | 268 kΩ (typical) |
| Data formats | IB IL, S7-compatible, standardized representation |
| Input filter | 30 Hz, 12 kHz and mean-value generation (can be parameterized) |
| Limit frequency (3 dB) | 30 Hz |
| | 12 kHz |
| Common mode voltage range signal - ground | -50 V DC ... 50 V DC |
| Measured value representation | 16 bits (15 bits + sign bit) |
| Protective circuit | Transient protection of inputs; Suppressor diode |
| | Overload protection of the current inputs; No; ±5.2 V DC, maximum, $I_{max} = 50$ mA |
| | Overload protection of the voltage inputs; ±30 V DC, maximum |

Output data

Analog

| | |
|--|---|
| Output name | Analog outputs |
| Connection method | Push-in connection |
| Connection technology | 2-conductor |
| Note regarding the connection technology | shielded, twisted pair |
| Number of outputs | 2 |
| D/A converter resolution | 16 bit |
| Protective circuit | Short-circuit and overload protection; electronic |
| | Transient protection; Suppressor diode |
| Data formats | IB IL, S7-compatible, standardized representation |
| Representation of output values | 16 bits (15 bits + sign) |
| Process data update | 150 μs |
| Current output signal | 0 mA ... 20 mA |
| | 4 mA ... 20 mA |
| | -20 mA ... 20 mA |
| Load/output load current output | ≤ 500 Ω |
| Voltage output signal | 0 V ... 5 V |
| | -5 V ... 5 V |
| | 0 V ... 10 V |
| | -10 V ... 10 V |
| Load/output load voltage output | ≥ 2 kΩ |

Product properties

| | |
|----------------|---------------|
| Type | block modular |
| Product type | I/O component |
| Product family | Axioline F |

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| | |
|--------------------|---|
| Mounting position | any (no temperature derating) |
| Scope of delivery | including bus base module and Axioline F connectors |
| Special properties | Extreme conditions version |

Insulation characteristics

| | |
|----------------------|------------------------------|
| Overvoltage category | II (IEC 60664-1, EN 60664-1) |
| Pollution degree | 2 (IEC 60664-1, EN 60664-1) |

Electrical properties

Potentials

| | |
|-------------------|---------------------------------------|
| Power consumption | typ. 1.56 W (at U_{BUS} and U_A) |
| | max. 2.67 W (at U_{BUS} and U_A) |

Potentials: Axioline F local bus supply (U_{BUS})

| | |
|-------------------|------------------------------|
| Supply voltage | 5 V DC (via bus base module) |
| Current draw | max. 150 mA |
| | typ. 120 mA |
| Power consumption | max. 0.75 W |
| | typ. 0.6 W |

Potentials: Supply for analog modules (U_A)

| | |
|----------------------|--|
| Supply voltage | 24 V DC |
| Supply voltage range | 19.2 V DC ... 30 V DC (including all tolerances, including ripple) |
| Current draw | max. 80 mA (2 current channels, 24 mA output, 500 Ω load) |
| | typ. 40 mA |
| | max. 60 mA (2 voltage channels, 10 V output, 2 k Ω load) |
| Power consumption | max. 1.92 W |
| Protective circuit | Surge protection; electronic (35 V, 0.5 s) |
| | Reverse polarity protection; Polarity protection diode |
| | Transient protection; Suppressor diode |

Electrical isolation/isolation of the voltage ranges

| | |
|---|-------------------------|
| Test voltage: 5 V supply of the local bus (U_{BUS}) / 24 V supply (I/Os) | 500 V AC, 50 Hz, 1 min. |
| Test voltage: 5 V supply of the local bus (U_{BUS}) / analog inputs and outputs | 500 V AC, 50 Hz, 1 min. |
| Test voltage: 5 V supply of the local bus (U_{BUS}) / functional ground | 500 V AC, 50 Hz, 1 min. |
| Test voltage: 24 V supply (I/O) / analog inputs and outputs | 500 V AC, 50 Hz, 1 min. |
| Test voltage: 24 V supply (I/O) / functional ground | 500 V AC, 50 Hz, 1 min. |
| Test voltage: Analog inputs and outputs/functional ground | 500 V AC, 50 Hz, 1 min. |

Connection data

Connection technology

| | |
|-----------------|----------------------|
| Connection name | Axioline F connector |
|-----------------|----------------------|

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| | |
|-------------------------------|---|
| Note on the connection method | Please observe the information provided on conductor cross sections in the "AxioLine F: system and installation" user manual. Applications with UL approval: only use copper conductors. |
|-------------------------------|---|

Conductor connection

| | |
|----------------------------------|---|
| Connection method | Push-in connection |
| Conductor cross section rigid | 0.2 mm ² ... 1.5 mm ² |
| Conductor cross section flexible | 0.2 mm ² ... 1.5 mm ² |
| Conductor cross section AWG | 24 ... 16 |
| Stripping length | 8 mm |

AxioLine F connector

| | |
|-----------------------------------|---|
| Connection method | Push-in connection |
| Note on the connection method | Please observe the information provided on conductor cross sections in the "AxioLine F: system and installation" user manual. Applications with UL approval: only use copper conductors. |
| Conductor cross section, rigid | 0.2 mm ² ... 1.5 mm ² |
| Conductor cross section, flexible | 0.2 mm ² ... 1.5 mm ² |
| Conductor cross section AWG | 24 ... 16 |
| Stripping length | 8 mm |

Environmental and real-life conditions

Ambient conditions

| | |
|--|---|
| Ambient temperature (operation) | -25 °C ... 60 °C (Standard applications and applications with UL approval) -40 °C ... 70 °C (Extended, see section "Tested successfully: use under extreme ambient conditions" in the data sheet.) |
| Degree of protection | IP20 |
| Air pressure (operation) | 70 kPa ... 106 kPa (up to 3000 m above sea level) |
| Air pressure (storage/transport) | 70 kPa ... 106 kPa (up to 3000 m above sea level) |
| Ambient temperature (storage/transport) | -40 °C ... 85 °C |
| Permissible humidity (operation) | 5 % ... 95 % (non-condensing) |
| Permissible humidity (storage/transport) | 5 % ... 95 % (non-condensing) |

Standards and regulations

| | |
|------------------|---------------------------------------|
| Protection class | III (IEC 61140, EN 61140, VDE 0140-1) |
|------------------|---------------------------------------|

Mounting

| | |
|-------------------|-------------------------------|
| Mounting type | DIN rail mounting |
| Mounting position | any (no temperature derating) |

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Classifications

ECLASS

| | |
|-------------|----------|
| ECLASS-11.0 | 27242601 |
| ECLASS-12.0 | 27242601 |
| ECLASS-13.0 | 27242601 |

ETIM

| | |
|----------|----------|
| ETIM 9.0 | EC001596 |
|----------|----------|

UNSPSC

| | |
|-------------|----------|
| UNSPSC 21.0 | 32151600 |
|-------------|----------|

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Environmental product compliance

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|------------|--|
| REACH SVHC | Lead 7439-92-1 |
| China RoHS | Environmentally Friendly Use Period = 50 years |
| | For information on hazardous substances, refer to the manufacturer's declaration available under "Downloads" |

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